

Learning Objective: Students will be able to use Euclid's Ladder to find greatest common factors of two numbers.

Warm Up

$$\begin{array}{r} 70 \\ \times 11 \\ \hline \end{array}$$

$$\begin{array}{r} 35 \\ \times 52 \\ \hline \end{array}$$

$$\begin{array}{r} 41 \\ \times 41 \\ \hline \end{array}$$

$$\begin{array}{r} 74 \\ \times 26 \\ \hline \end{array}$$

$$\begin{array}{r} 42 \\ \times 93 \\ \hline \end{array}$$

$$\begin{array}{r} 54 \\ \times 42 \\ \hline \end{array}$$

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Warm Up Answers

$$\begin{array}{r} 70 \\ \times 11 \\ \hline 70 \\ 700 \\ \hline 770 \end{array}$$

$$\begin{array}{r} 35 \\ \times 52 \\ \hline 70 \\ 1,750 \\ \hline 1,820 \end{array}$$

$$\begin{array}{r} 41 \\ \times 41 \\ \hline 41 \\ 1,640 \\ \hline 1,681 \end{array}$$

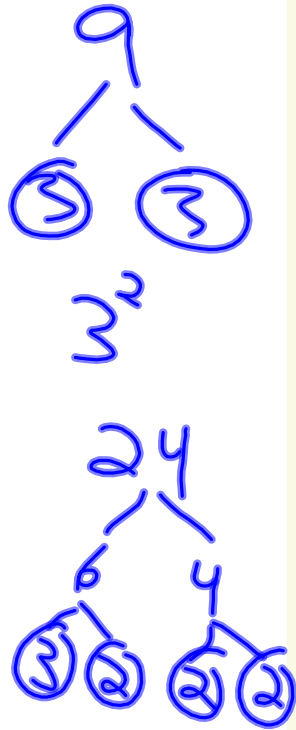
$$\begin{array}{r} 74 \\ \times 26 \\ \hline 444 \\ 1,480 \\ \hline 1,924 \end{array}$$

$$\begin{array}{r} 42 \\ \times 93 \\ \hline 126 \\ 3,780 \\ \hline 3,906 \end{array}$$

$$\begin{array}{r} 54 \\ \times 42 \\ \hline 108 \\ 2,160 \\ \hline 2,268 \end{array}$$

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Homework Answers



1.4 Record and Practice Journal

List the factor pairs of the number.

1. 6

$1 \cdot 6, 2 \cdot 3$

2. 7

$1 \cdot 7$

3. 10

$1 \cdot 10, 2 \cdot 5$

4. 16

$1 \cdot 16, 2 \cdot 8,$
 $4 \cdot 4$

5. 35

$1 \cdot 35, 5 \cdot 7$

6. 55

$1 \cdot 55, 5 \cdot 11$

Write the prime factorization of the number.

7. 9

3^2

8. 24

$2^3 \cdot 3$

9. 40

$2^3 \cdot 5$

10. 44

$2^2 \cdot 11$

11. 50

$2 \cdot 5^2$

12. 65

$5 \cdot 13$

13. A fitness instructor arranges 30 people into rows. Each row has the same number of people.

a. Can the instructor arrange the people into rows of 6?

yes

b. Can the instructor arrange the people into rows of 9?

no

Handwritten notes on the right side of the page:

- 1, 2 5, 10
- 1 · 10
- 2 · 5
- 1, 2, 4, 4, 8, 16
- 1 · 16
- 2 · 8
- 4 · 4

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Lesson 1.5

September 12, 2014

Essential Question:

How can you find the greatest common factor of two numbers?

Lesson Objective:

Students will be able to:

use Euclid's Ladder to find greatest common factors of two numbers.

Self-Evaluation Scale

Score	Description
4	I can teach other students how to use Euclid's Ladder to find greatest common factors of two numbers.
3	I can use Euclid's Ladder to find greatest common factors of two numbers.
2	I recognize, but still need help to use Euclid's Ladder to find greatest common factors of two numbers.
1	I do not know how to use Euclid's Ladder to find greatest common factors of two numbers.

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Euclid



also known as Euclid of Alexandria, was a Greek mathematician, often referred to as the "Father of Geometry".

12 18
①, ②, ③, 4, ⑥, 2
①, ②, ③, ④, 9, 18

G [F
6

$$\begin{array}{r} 2 \\ \times 3 \\ \hline 6 \\ 60 \\ \hline 66 \end{array}$$

A handwritten multiplication problem in red ink. The numbers 2, 3, 6, 60, and 66 are written in red. A black oval is drawn around the numbers 2 and 3. The multiplication is shown as 2 times 3 equals 6, with a horizontal line below the 6. Then 60 is written below the 6, and another horizontal line is drawn below 60. The final result, 66, is written below the 60.

6

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$$\frac{12}{20} = \frac{3}{5}$$

Euclid's Ladder

$$\begin{array}{r} \textcircled{2} \mid 12 \quad 20 \\ \hline 2 \mid 6 \quad 10 \\ \hline 3 \quad 5 \\ \text{GCF} = 4 \end{array}$$

$$\begin{array}{r} 7 \mid 14 \quad 35 \\ \hline 2 \quad 5 \end{array}$$

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On Your Own

$$\textcircled{6} \begin{array}{r} 12 \quad 30 \\ \hline 2 \quad 5 \end{array}$$

$$2 \begin{array}{r} 32 \quad 54 \\ \hline 16 \quad 27 \end{array}$$

$$\begin{array}{r} 2 \begin{array}{r} 24 \quad 108 \\ \hline 12 \quad 54 \end{array} \\ 2 \begin{array}{r} 12 \quad 54 \\ \hline 6 \quad 27 \end{array} \\ 3 \begin{array}{r} 6 \quad 27 \\ \hline 2 \quad 9 \end{array} \end{array} = 12$$

$$\textcircled{17} \begin{array}{r} 51 \quad 85 \\ \hline 3 \quad 5 \end{array}$$

$$\textcircled{14} \begin{array}{r} 2 \begin{array}{r} 14 \quad 84 \\ \hline 7 \quad 42 \end{array} \\ 7 \begin{array}{r} 7 \quad 42 \\ \hline 1 \quad 6 \end{array} \end{array}$$

$$\textcircled{13} \begin{array}{r} 39 \quad 66 \\ \hline 13 \quad 22 \end{array}$$

KISS

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Homework

In your Big Ideas Record and Practice Journal
page 22.